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Mudalige

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(54) **FAIL-SAFE SPEED PROFILES FOR COOPERATIVE AUTONOMOUS VEHICLES**

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(52) **U.S. Cl.**
USPC **701/93**; 701/32.7; 701/33.6; 701/23; 701/54; 701/79; 701/110; 700/304; 370/252

(58) **Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

A method for controlling speed of a vehicle based upon control messages received through a communications device within the vehicle includes monitoring communication of control messages to a propulsion controller wherein control messages includes a speed profile including a current speed command representing instantaneous desired speed of the vehicle and future speed commands representing a predetermined controlled vehicle stop through a speed profile period, detecting anomalous communications of the control messages, and controlling the speed of the vehicle during anomalous communications using the future speed commands.

14 Claims, 20 Drawing Sheets

Field	Interpretation	Typical Use
Speed delta_1	Change from the current Command Speed anticipated at a distance equal to (25%) of the Length of Speed Profile measured from the current location	Initial coasting or slight deceleration... if communications recovers, the motion will not be disruptive
Speed delta_2	Change from the current Command Speed anticipated at a distance equal to (50%) of the Length of Speed Profile measured from the current location	Transition to significant slowing
Speed delta_3	Change from the current Command Speed anticipated at a distance equal to (75%) of the Length of Speed Profile measured from the current location	Transition to significant slowing
Speed delta_4	Change from the current Command Speed anticipated at a distance equal to (100%) of the Length of Speed Profile measured from the current location	Complete stop for fail-safe maneuver (which would be the inverse of the current Command Speed)